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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,479

04/20/2006

Hiroyuki Fukuhara

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EXAMINER

YANG, JIE

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

05/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,479	Applicant(s) FUKUHARA ET AL.	
	Examiner JIE YANG	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 10-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/20/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8 and 10-19, drawn to a method for manufacturing a wear-resistant element with Fe-Cr-N compound layer.

Group II, claim(s) 9, drawn to a product of a wear-resistant element with Fe-Cr-N compound layer.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: they lack the same of unity a posteriori because the common feature of “a wear-resistant element with Fe-Cr-N compound layer.” is known in the art. Hirose Masahito (JP6299284, thereafter JP’284) discloses a nitrided sintered member with alloy steel containing Cr and nitriding treatment with gaseous N₂ to form a nitrided layer (Abstract of ‘JP284). Invention I-II lacks the same or corresponding special technical feature. Therefore unity of invention is lacking and restriction is appropriate.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

A telephone call was made to Mr. Matthew M. Jacob on May 1, 2008 to request an oral election to the above restriction requirement and result in applicant's election

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Group II without traverse. Claims 1-8 and 11-19 were withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions.

Claim 9 is pending for examination.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 9 is rejected under 35 U.S.C. 102(b) as anticipated by Hirose Masahito (JP6299284, thereafter JP'284).

Regarding claim 9, JP'284 teaches a nitrided sintered member with alloy steel containing Cr and nitriding treatment with gaseous N₂ to form a nitrided layer (Abstract of 'JP284), which reads on the limitations of a sintered and nitrided material having a surface; and a mixture structure of an Fe-Cr-N compound layer, an Fe-Cr-N diffused layer, and a matrix formed in the surface of the sintered and nitrided material as recited in the instant claim. JP'284 does not specify wherein the

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surface of the sintered and nitrided material being entirely covered with grains or protrusions of 0.1 to 0.5 μm . However, the microstructure of the nitrided layer is a feature that depends on the material and the nitriding process. JP'284 teaches the similar Fe-Cr-N sintering member (comparing between the abstract of JP'284 with the table 1 of the instant invention) and treated by the similar nitriding treatment with the gaseous N_2 (comparing between the abstract of JP'284 with the page 7, line 25 to Page 8, line 6 of the instant specification) to obtain the similar thickness (the depth of nitrided layer is up to 0.5mm—abstract of JP'284, while the depth of nitrided layer is more than 0.4mm as disclosed in Fig.4 and page 10, lines 2-8 of the instant specification). Therefore, the surface of the sintered and nitrided material is entirely covered with grains or protrusions of 0.1 to 0.5 μm would be inherently obtained. MPEP 2112 III&IV.

Claim 9 is rejected under 35 U.S.C. 102(b) as anticipated by John L. Ellis et al (US 3,368,882, thereafter, US'882).

Regarding claim 9, US'882 teaches a surface hardened metal article with a composition of any steel or alloy containing nitride-forming element, for example Cr (Col.3, line 56 to Col 4, line 2 of US'882), made by sintering in a substantially non-

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oxidizing atmosphere (Col.1, lines 34-54 of US'882) is nitrided by ammonia gas at a temperature range from about 500°C to 650°C (Col.4, lines 21-55 of US'882), which read on the limitations of a sintered and nitrided material having a surface; and a mixture structure of an Fe-Cr-N compound layer, an Fe-Cr-N diffused layer, and a matrix formed in the surface of the sintered and nitrided material as recited in the instant claim. US'882 does not specify wherein the surface of the sintered and nitrided material is entirely covered with grains or protrusions of 0.1 to 0.5 μm . However, the microstructure of the nitrided layer is a feature that depends on the material and the nitriding process. US'882 teaches the similar Fe-Cr-N sintering member (comparing between the Col.3, line 56 to Col.4, line 2 of US'882 with the table 1 of the instant invention) and treated by the similar nitriding treatment with the N-containing gaseous (comparing between Col.4, lines 21-55 of JP'284 with the page 7, line 25 to Page 8, line 6 of the instant invention) to obtain the similar nitrided layer (Abstract of US'882). Therefore, the surface of the sintered and nitrided material being entirely covered with grains or protrusions of 0.1 to 0.5 μm would be inherently obtained. MPEP 2112 III&IV.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY
/Roy King/
Supervisory Patent Examiner, Art Unit 1793